

IN THE CLAIMS:

Please cancel claims 2-6, 8, 9, 11, 20, 24-29, 35 and 36, amend claims 1 and 16, and add new claims 55-76 as follows.

This listing of claims will replace all prior versions, and listings of the claims in the application.

Listing of the claims

1. (currently amended). An isolated nucleic acid molecule comprising a nucleic acid sequence selected from the group consisting of:

~~a nucleic acid sequence that encodes a non-immunogenic fusion protein that comprises a non-IL-15 signal peptide linked to IL-15 protein or a functional fragment thereof;~~

~~a nucleic acid sequence that encodes a fusion protein that comprises IL-15 protein or a functional fragment thereof, linked to a non-IL-15 signal peptide that is from a gene that is from the same species as the IL-15;~~

~~a nucleic acid sequence that encodes IL-15 protein or a functional fragment thereof and a nucleotide sequence that encodes CD40L or a functional fragment thereof;~~

a nucleic acid sequence that encodes a fusion protein that consists of a non-IgE protein sequences linked to a IgE signal peptide that is from the same species as the non-IgE protein; and

a nucleic acid sequence that encodes a fusion protein that consists of a non-IgE protein sequences linked to a IgE signal peptide wherein the non-IgE protein is an immunomodulating protein.

2-13 (canceled).

14. (previously presented). The isolated nucleic acid molecule of claim 1 wherein said isolated nucleic acid molecule is a plasmid.
15. (previously presented). The nucleic acid molecule of claim 1 incorporated into a viral vector.
16. (currently amended). A composition ~~selected from the group consisting of:~~
a composition comprising a nucleic acid molecule of claim 1 and a nucleic acid molecule that comprises a nucleic acid sequence that encodes an immunogen; ~~and~~
~~a composition that comprises a nucleic acid molecule that comprises a nucleic acid sequence that encodes IL-15 protein and a nucleic acid molecule that comprises a nucleotide sequence that encodes CD4QL protein.~~
17. (previously presented). The composition of claim 16 wherein said composition comprises a nucleic acid molecule that encodes an immunogen, wherein said immunogen is a pathogen antigen, a cancer-associated antigen or an antigen linked to cells associated with autoimmune diseases.
18. (canceled).
19. (previously presented). The composition of claim 17 wherein said immunogen is a pathogen antigen is from a pathogen selected from the group consisting of HIV, HSV, HCV, and WNV.
20. (canceled).
21. (previously presented). An injectable pharmaceutical composition comprising the nucleic acid molecules of claim 1.

22. (previously presented). An recombinant vaccine comprising the nucleic acid molecules of claim 1.

23. (previously presented). The recombinant vaccine of claims 22 wherein said recombinant vaccine is a recombinant vaccinia vaccine.

24-37 (canceled).

38. (previously presented). The isolated nucleic acid molecule of claim 1 wherein said isolated nucleic acid molecule comprises a nucleic acid sequence that encodes a fusion protein that consists of an IgE signal peptide linked to non-IgE protein sequences wherein the non-IgE protein is an enzyme or functional fragment thereof.

39-53. (canceled).

54. (previously presented). An injectable pharmaceutical composition comprising the composition of claim 16.

55. (new). The isolated nucleic acid molecule of claim 1 comprising a nucleic acid sequence that encodes a fusion protein that consists of a non-IgE protein sequences linked to a IgE signal peptide that is from the same species as the non-IgE protein.

56. (new). The isolated nucleic acid molecule of claim 55 wherein said isolated nucleic acid molecule is a plasmid.

57. (new). The nucleic acid molecule of claim 55 incorporated into a viral vector.

58. (new). A composition comprising a nucleic acid molecule of claim 55 and a nucleic acid molecule that comprises a nucleic acid sequence that encodes an immunogen.

59. (new). The composition of claim 58 wherein said composition comprises a nucleic acid molecule that encodes an immunogen, wherein said immunogen is a pathogen antigen, a cancer-associated antigen or an antigen linked to cells associated with autoimmune diseases.

60. (new). The composition of claim 59 wherein said immunogen is a pathogen antigen is from a pathogen selected from the group consisting of HIV, HSV, HCV, and WNV.

61. (new). An injectable pharmaceutical composition comprising the nucleic acid molecules of claim 55.

62. (new). An recombinant vaccine comprising the nucleic acid molecules of claim 55.

63. (new). The recombinant vaccine of claims 62 wherein said recombinant vaccine is a recombinant vaccinia vaccine.

64. (new). The isolated nucleic acid molecule of claim 55 wherein said isolated nucleic acid molecule comprises a nucleic acid sequence that encodes a fusion protein that consists of an IgE signal peptide linked to non-IgE protein sequences wherein the non-IgE protein is an enzyme or functional fragment thereof.

65. (new). An injectable pharmaceutical composition comprising the composition of claim 58.
66. (new). The isolated nucleic acid molecule of claim 1 comprising a nucleic acid sequence that encodes a fusion protein that consists of a non-IgE protein sequences linked to a IgE signal peptide wherein the non-IgE protein is an immunomodulating protein.
67. (new). The isolated nucleic acid molecule of claim 66 wherein said isolated nucleic acid molecule is a plasmid.
68. (new). The nucleic acid molecule of claim 66 incorporated into a viral vector.
69. (new). A composition comprising a nucleic acid molecule of claim 66 and a nucleic acid molecule that comprises a nucleic acid sequence that encodes an immunogen.
70. (new). The composition of claim 69 wherein said composition comprises a nucleic acid molecule that encodes an immunogen, wherein said immunogen is a pathogen antigen, a cancer-associated antigen or an antigen linked to cells associated with autoimmune diseases.
71. (new). The composition of claim 70 wherein said immunogen is a pathogen antigen is from a pathogen selected from the group consisting of HIV, HSV, HCV, and WNV.
72. (new). An injectable pharmaceutical composition comprising the nucleic acid molecules of claim 66.

73. (new). An recombinant vaccine comprising the nucleic acid molecules of claim 66.

74. (new). The recombinant vaccine of claims 73 wherein said recombinant vaccine is a recombinant vaccinia vaccine.

75. (new). The isolated nucleic acid molecule of claim 66 wherein said isolated nucleic acid molecule comprises a nucleic acid sequence that encodes a fusion protein that consists of an IgE signal peptide linked to non-IgE protein sequences wherein the non-IgE protein is an enzyme or functional fragment thereof.

76. (new). An injectable pharmaceutical composition comprising the composition of claim 69.